

WHAT IS CLAIMED IS:

1. An apparatus for correcting a deviation of an imaging sensor of a digital camera in which an image of an object or a scene is formed on an image plane of the imaging sensor so that the imaging sensor outputs an image signal, comprising:

a rotation detecting unit which detects a quantity of rotation of the digital camera causing a deviation of the imaging sensor from a reference position to occur, the rotation detecting unit including an acceleration sensor outputting a signal indicative of an acceleration of the digital camera and a magnetic sensor outputting a signal indicative of a magnetic field of the digital camera.

2. The apparatus as claimed in claim 1, further comprising:

a target vector calculating unit which calculates a target vector, the target vector describing a magnitude and a direction of an inverse movement of the imaging sensor needed to reach the reference position and cancel the deviation;

a translation detecting unit, connected to the target vector calculating unit, which detects a quantity of

translation of the digital camera causing the deviation of the imaging sensor from the reference position to occur; and

a translation quantity calculating unit which
5 calculates a change of the quantity of translation of the imaging sensor based on the quantity of translation detected by the translation detecting unit,

wherein the target vector calculating unit calculates the target vector based on a change of a positional angle
10 of the imaging sensor and on the change of the quantity of translation calculated by the translation quantity calculating unit, and wherein the change of the positional angle of the imaging sensor is calculated based on the quantity of rotation detected by the rotation detecting
15 unit.

3. The apparatus as claimed in claim 1, wherein the rotation detecting unit includes a set of acceleration sensors provided to output signals indicative of
20 accelerations of the digital camera along an X axis, a Y axis and a Z axis of a world coordinate system, and a set of magnetic sensors provided to output signals indicative of magnetic fields of the digital camera along the X axis, the Y axis and the Z axis of the world coordinate system.

4. The apparatus as claimed in claim 2, wherein the rotation detecting unit includes a set of acceleration sensors provided to output signals indicative of
5 accelerations of the digital camera along an X axis, a Y axis and a Z axis of a world coordinate system, and both the quantity of rotation of the digital camera and the quantity of translation of the digital camera are detected based on the output signals of the set of acceleration
10 sensors in common.

5. The apparatus as claimed in claim 2, wherein the detection of the quantity of rotation, the calculation of the target vector, and a movement of the imaging sensor
15 back to the reference position such that it corrects the deviation are executed in less than 1/25 seconds.

6. The apparatus as claimed in claim 1, wherein the quantity of rotation represents a rotation caused by a
20 shaking motion of the digital camera.

7. The apparatus as claimed in claim 2, wherein the quantity of rotation represents a rotation caused by a shaking motion of the digital camera.

8. The apparatus as claimed in claim 1, wherein the rotation detecting unit comprises a gyro.

5 9. The apparatus as claimed in claim 2, wherein the translation detecting unit comprises a range finder.

10 10. A method of correcting a deviation of an imaging sensor of a digital camera in which an image of an object or a scene is formed on an image plane of the imaging sensor so that the imaging sensor outputs an image signal, comprising:
detecting a quantity of rotation of the digital camera causing a deviation of the imaging sensor from a reference position to occur, the quantity of rotation being detected based on an output signal of an acceleration sensor indicative of an acceleration of the digital camera and an output signal of a magnetic sensor indicative of a magnetic field of the digital camera.

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11. The method as claimed in claim 10, further comprising:

calculating a target vector, the target vector describing a magnitude and a direction of an inverse

movement of the imaging sensor needed to reach the
reference position and cancel the deviation;

detecting a quantity of translation of the digital
camera causing the deviation of the imaging sensor from the
5 reference position to occur; and

calculating a change of a quantity of translation of
the imaging sensor based on the detected quantity of
translation,

wherein said calculating of the target vector is
10 executed based on a change of a positional angle of the
imaging sensor and on the calculated change of the quantity
of translation, and wherein the change of the positional
angle of the imaging sensor is calculated based on the
detected quantity of rotation.

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